

## **WHAT IS CLAIMED IS:**

1. An image converting apparatus, comprising:
  - a divider which divides a 24-bit color image into respective 8-bit RGB values per pixel;
  - a comparator which judges which one of the RGB colors has a comparatively greater specific gravity;
  - a shifter which shifts each of the 8-bit RGB values in order to allocate at least one extra bit to the color having the comparatively greater specific gravity; and
  - a combiner which generates a 16-bit image by combining the shifted RGB values.
2. The apparatus of claim 1, wherein the shifter shifts the 8-bit RGB values so that 6 bits are output to the combiner for the color having the comparatively greater specific gravity.
3. The apparatus of claim 1, wherein the shifter allocates 5 bits to the colors having a comparatively less specific gravity respectively.
4. The apparatus of claim 1, wherein the shifter shifts the RGB values so that the at least one extra bit is allocated to the R value when R has a comparatively greater specific value.

5. The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 2 bits and outputs the remaining 6 R bits to the combiner, shifts the 8-bit G value by 3 bits and outputs the remaining 5 G bits to the combiner, and shifts the 8-bit B value by 3 bits and outputs the remaining 5 B bits to the combiner.

6. The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 6:5:5 for each pixel in the 16-bit image.

7. The apparatus of claim 1, wherein the shifter allocates the at least one extra bit to the G value when G has the comparatively greater specific gravity.

8. The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 3bits and outputs the remaining 5 R bits to the combiner, shifts the 8-bit G value by 2 bits and outputs the remaining 6 G bits to the combiner, and shifts the 8-bit B value by 3 bits and outputs the remaining 5 B bits to the combiner.

9. The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 5:6:5 for each pixel in the 16-bit image.

10. The apparatus of claim 1, wherein the shifter allocates the at least one extra bit to the B value when B has the comparatively greater specific gravity.

11. The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 3 bits and outputs the remaining 5 R bits to the combiner, shifts the G value by 3 bits and outputs the remaining 5 G bits to the combiner, and shifts the B value by 2 bits and outputs the remaining 6 B bits to the combiner.

12. The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 5:5:6 for each pixel in the 16-bit image.

13. An image converting method, comprising:  
dividing a color image into first RGB color values;  
judging which of the RGB colors in the color image has a comparatively greater specific gravity;  
generating second RGB color values from the first RGB color values, said generating step including allocating at least one extra bit to the color having the comparatively greater specific gravity; and  
combining the second RGB color values for each pixel to form a converted color image.

14. The method of claim 13, wherein the judging step includes:  
calculating the first RGB color values by pixels or calculating the first RGB color values of the whole color image.

15. The method of claim 13, wherein the allocating step includes:  
allocating 6 bits including the extra bit to represent the color having the comparatively greater specific gravity; and  
allocating 5 bits to represent each of the other colors.
16. The method of claim 13, wherein the allocating step further includes:  
allocating the at least one extra bit to the second R value when R has the comparatively greater specific gravity.
17. The method of claim 13, wherein the allocating step further includes:  
allocating the at least one extra bit to the second G value when G has the comparatively greater specific gravity.
18. The method of claim 13, wherein the allocating step further includes:  
allocating the at least one extra bit to the second B value when B has the comparatively greater specific gravity.
19. The method of claim 13, wherein the first RGB color values are of M-bit size and the second RGB color values have a bit size smaller than M.

20. An image conversion method, comprising:
- determining which of a plurality of colors in an M bit-size image has a predetermined specific gravity; and
  - converting the M bit-size image into an N bit-size image based on a result of the determining step, wherein  $M > N$ .
21. The method of claim 20, wherein the predetermined specific gravity is a largest specific gravity of the plurality of colors in the M bit-size image.
22. The method of claim 20, wherein the converting step includes:
- generating first RGB values for each pixel in the M bit-size image;
  - converting the first RGB values into second RGB values; and
  - combining the second RGB values to form the N bit-size image.
23. The method of claim 21, wherein converting the first RGB values into the second RGB values includes:
- allocating a first number of bits to represent the second RGB value corresponding to the color having the predetermined specific gravity; and
  - allocating a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

24. The method of claim 23, wherein the first number of bits is greater than the second number of bits.

25. The method of claim 21, wherein  $M=24$  and  $N=16$ .

26. The method of claim 23, wherein  $M=24$ ,  $N=16$ , the first number of bits is 6 and the second number of bits is 5.

27. An image conversion method, comprising:  
dividing a first image into first RGB values per pixel;  
determining which of the RGB colors in the first image has a greater specific gravity;  
converting the first RGB values into second RGB color values based on the color with the greater specific gravity; and  
forming a second image based on the second RGB values.

28. The method of claim 27, wherein the converting step includes:  
allocating a first number of bits to represent the second RGB value corresponding to the color having the greater specific gravity; and  
allocating a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

29. The method of claim 28, wherein the first number is bits is greater than the second number of bits.

30. The method of claim 27, wherein the first image is an M-bit image and the second image is an N-bit image, where  $M > N$ .

31. The method of claim 30, wherein  $M=24$  and  $N=16$ .

32. The method of claim 29, wherein the first image is an M-bit image and the second image is an N-bit image, where  $M > N$ .

33. The method of 32, wherein the first number is 6 and the second number is 5.

34. An image conversion apparatus, comprising:  
a divider which divides a first image into first RGB values per pixel;  
a comparator that determines which of the RGB colors has a greater specific gravity;  
a converter which converts the first RGB values into second RGB color values based on the color with the greater specific gravity; and  
a combiner which forms a second image based on the second RGB values.

35. The apparatus of claim 34, wherein the converter allocates a first number of bits to represent the second RGB value corresponding to the color having the greater specific gravity and allocates a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

36. The apparatus of claim 35, wherein the first number of bits is greater than the second number of bits.

37. The apparatus of claim 34, wherein the first image is an M-bit image and the second image is an N-bit image, where  $M > N$ .

38. The apparatus of claim 37, wherein  $M=24$  and  $N=16$ .

39. The apparatus of claim 36, wherein the first image is an M-bit image and the second image is an N-bit image, where  $M > N$ .

40. The apparatus of claim 39, wherein the first number is 6 and the second number is 5.